breakfast with food and at least 8 ounces of water and at dinner with food and at least 8 ounces of water.

The patients were asked to evaluate abdominal discomfort upon waking in the morning, using a 5-point scale (Score: 0=absent, 1=mild, 2=moderate, 3=severe, 4=very severe) at 2 and 4 weeks after the initiation of the treatments.

Results

As shown in Table 2, test substance of this invention significantly improved the abdominal discomfort in patients with constipation.

TABLE 2

Effect of test substance on abdominal discomfort in patients with constipation

	Abdominal discomfort score, Mean ± SD (N)	
	Placebo	Test Substance
Week 2	1.41 ± 1.035 (122)	1.09 ± 1.047* (116)
Week 3	1.64 ± 1.114 (122)	1.27 ± 1.057* (117)
Week 4	1.52 ± 1.038 (122)	1.22 ± 1.060* (117)

Test substance: 13,14-dihydro-15-keto-16,16-difluoro-PGE_1

*$p < 0.05$ (van Elteren test stratified by center)

EXAMPLE 3

Methods

Patients with irritable bowel syndrome (IBS) were randomly allocated to the following two treatment groups.

Group 1: Test substance (13,14-dihydro-15-keto-16,16-difluoro-PGE_1) 48 μg total (24 μg/breakfast+24 μg/dinner)

Group 2: Matching placebo (placebo/breakfast+placebo/dinner)

Each group underwent two weeks washout period and then began to administer oral test substance (capsules) or placebo (capsules) daily for 4 weeks. Test substance or placebo was taken two times a day (b.i.d) at breakfast with food and at least 8 ounces of water and at dinner with food and at least 8 ounces of water. The patients were asked to evaluate abdominal bloating upon waking in the morning, using a 5-point scale (Score: 0=absent, 1=mild, 2=moderate, 3=severe, 4=very severe) at 4 weeks after the initiation of the treatments.

Results

As shown in Table 3, test substance of this invention significantly improved the abdominal bloating in patients with IBS.

TABLE 3

Effect of test substance on abdominal bloating in patients with IBS

	Abdominal bloating score, Mean ± SD (N)	
Week	Placebo	Test Substance
Baseline	2.46 ± 0.859 (26)	2.50 ± 0.916 (32)
Week 4	2.42 ± 0.945 (26)	1.74 ± 0.999** (31)

Test substance: 13,14-dihydro-15-keto-16,16-difluoro-PGE_1

**$p < 0.01$ (van Elteren test stratified by center)

EXAMPLE 4

Methods

Patients with irritable bowel syndrome (IBS) exhibiting dyschezia were randomly allocated to the following two treatment groups.

Group 1: Test substance (13,14-dihydro-15-keto-16,16-difluoro-PGE_1) 48 μg total (24 μg/breakfast+24 μg/dinner)

Group 2: Matching placebo (placebo/breakfast+placebo/dinner)

Each group underwent two weeks washout period and then began to administer oral test substance (capsules) or placebo (capsules) daily for 4 weeks. Test substance or placebo was taken two times a day (b.i.d) at breakfast with food and at least 8 ounces of water and at dinner with food and at least 8 ounces of water. After 3 consecutive days of not having spontaneous bowel movement, the investigator could prescribe to the patient 10 mg bisacodyl suppository as a rescue medication. If this was not effective, Fleet® enema could be used. During the study period, each patient documented bowel activity. A spontaneous bowel movement was defined as any bowel movement except for that occurred within 24 hours after the rescue medication. Frequency of spontaneous bowel movements at Baseline, Weeks 1, 2, 3 and 4 were analyzed.

Results

As shown in Table 4, test substance of this invention significantly improved the spontaneous bowel movement frequency in patients with IBS exhibiting dyschezia.

TABLE 4

Effect of test substance on spontaneous bowel movement frequency rates in patients with IBS exhibiting dischezia

	Spontaneous Bowel Movement Frequency Rates, Mean ± SD (N)	
Week	Placebo	Test Substance
Baseline	1.85 ± 2.310 (26)	1.43 ± 0.773 (32)
Week 1	3.58 ± 2.887 (26)	6.50 ± 4.108** (32)
Week 2	2.84 ± 2.481 (26)	5.58 ± 4.003** (32)
Week 3	2.30 ± 2.170 (26)	5.93 ± 4.775** (32)
Week 4	2.21 ± 2.399 (26)	5.17 ± 4.333* (32)

Test substance: 13,14-dihydro-15-keto-16,16-difluoro-PGE_1

*$p < 0.05$, ** $p < 0.01$ (van Elteren test stratified by center)

What is claimed is:

1. A method for treating irritable bowel syndrome in a mammalian subject, which comprises administering an effective amount of 13,14-dihydro-15-keto-16,16-difluoro-18-methyl-prostaglandin E_1, or a salt, ether, ester or amide thereof, to the subject.

2. The method as described in claim **1**, which comprises administering an effective amount of 13,14-dihydro-15-keto-16,16-difluoro-18-methyl-prostaglandin E_1, or a pharmaceutically acceptable salt, ester or amide thereof.

3. The method as described in claim **1**, which comprises systemic administration 1-4 times per day or continuous administration in the amount of 0.01-100 μg/kg per day or a 13,14-dihydro-15-keto-16,16-difluoro-18-methyl-prostaglandin E_1 compound.

4. A method for treating as described in claim **2**, wherein the administration is in the amount of 0.1-10 μg/kg per day.